

## **DEFLECTION CLIP**

### **Cross Reference to Related Applications**

This application claims the benefit of United States Provisional Application  
5 Number 60/291,490, filed May 16, 2001.

### **Field of the Invention**

This invention relates generally to the field of wall framing assemblies and  
more particularly, but without limitation, to an apparatus and associated method for  
10 operatively connecting framing members in a slip joint.

### **Background of the Invention**

In constructing buildings with metal framing members it is well known in the  
art to utilize slip-type connector devices to flexibly connect horizontal beam members  
15 with vertical stud members. Such connector devices are commonly used to form  
expandable joints commonly referred to as "slip joints." Slip joints are particularly  
useful in the framing of partition walls which, if otherwise constructed rigidly, can be  
subjected to adverse compressive and tensile forces by loads acting on the building  
floors and roof. These forces can lead to problems associated with cracking and  
20 bowing of the coverings that are attached on the framing members. The slip joint  
solves the problem by permitting deflection of framing members at the joint; that is,  
by permitting the framing members to displace relative to each other under loading at  
the joint.

Loads of concern can be categorically, for example, live loads, dead loads,  
25 seismic loads and wind loads and any other loads acting on the building including but  
not limited to foot traffic, slab heaving, environmental loading (snow and wind load),  
and thermal expansion. Although the floors and the roof must be designed to

withstand these loads, the partition walls are preferably isolated from them, in part by the slip joints.

The capability of a slip joint connector depends on maintaining a sliding engagement relationship between the connected framing members during deflection.

- 5 This sliding engagement must be preserved throughout the wall's expected life span. It is essential that the slip joint permit the desired freedom of movement without binding, which can render the slip joint useless.

- It has been found that significantly improved slip joint performance is achieved by employing a slip connector characteristic of the type involving a clip that
- 10 rigidly fixes at one end to the horizontal member and that has an extending guide defining a channel that receivingly engages the vertical member medial web portion in a characteristic sliding relationship. Slidingly supporting the web portion of the vertical framing member substantially reduces the torsion imparted to the framing members during deflection. Torsion is further reduced by attaching the clip fixed end
- 15 with forces acting substantially parallel with the channel.

- A positive engagement can be achieved by narrowing the channel so that bearing surfaces in the guide compressingly slidingly engage against the vertical member with a desired frictional resistance to the operative sliding engagement. This compressing engagement feature provides a slip joint assembly that is comparatively
- 20 easier to use because, for example, the clip is self-aligning with the framing members, and the clip is self-retaining during subsequent construction of the wall assembly. It is to these improvements and other features and advantages apparent from the description and appended claims that embodiments of the present invention are directed.

## Summary of the Invention

Embodiments of the present invention are directed to a slip joint connector device involving a deflection clip comprising a planar base plate comprising a first surface and an opposing second surface, and the clip further comprising a guide depending from the base plate. The guide comprises a first arm extending along a longitudinal axis substantially transverse to the base plate from a proximal end adjacent the second surface. The guide further comprises a second arm extending away from the base plate oriented in the same direction as the first arm defining a channel between the arms.

The clip operatively connects a first member to a second member in a slip joint, the second member comprising a medial web and one or more outer flanges. The base is connectable to the first member and the guide depends from the base such that the channel receivingly engages the second member web in a characteristic operative sliding relationship. In one embodiment the opposing arms are selectively spatially disposed to operatively compressingly engage the second member web with a selected frictional resistance to the operative sliding engagement. In one embodiment the guide defines an opening in at least one of the arms adapted for admitting a retainer limiting the extents of displacement between the members. The retainer prevents the members from being pulled apart even under extreme loading.

Another aspect of the present invention includes a wall framing assembly comprising a first track, a second track substantially aligned and spatially disposed from the first track, and a plurality of studs interposed between the tracks, each stud comprising a longitudinal extending medial web portion and one or more longitudinal extending stiffening flanges between a first end and a second end of the stud. A clip operatively connects a selected stud's first end to the first track in a slip joint, the clip comprising a base fixed to the first track, and a guide depending from the base comprising opposing arms defining a channel receivingly engaging the selected stud's web in a characteristic operative sliding relationship, and a fastener connecting the